

REMARKS

Claims 1-27 are pending. Claim 1 has been amended to incorporate the features of claims 2 and 6, and claim 14 has been amended to incorporate the similar features of claims 15 and 19. Claim 7 and 20 have been amended to update their dependencies. Claims 2, 6, 15 and 19 have been canceled.

Summary of Telephonic Interview

The undersigned wishes to thank Examiner Morrison for taking the time to discuss the present Office Action on November 30, 2007. During the interview, the foregoing amendments and following arguments were discussed. The Examiner indicated that the foregoing amendments should overcome the present rejection.

The Present Office Action

The Office Action has maintained the Section 102(b) rejection of claims 1, 4, 8, 9, 14, 17, 21-22 and 27 as being anticipated by Schallehn. The other claims stand rejected under Section 103(a) as being obvious over Schallehn in combination with one or more of Barry, Soloviev, Kriens and Berg. Reconsideration is respectfully requested for the following reasons.

The Cited Art Does Not Teach Or Suggest The Features of Dependent claims 2, 6 and 15, 19 Which Have Been Incorporated Into Independent Claims 1 and 14

Independent claims 1 and 14 have been amended to incorporate the features of claims 2, 6 and 15, 19, respectively. As such, these claims now each recite that the contract applied to the class that defines a user-defined aggregate includes “a requirement that the class specify one of a plurality of different formats which describes *how* instances of the user-defined aggregate are to be persisted in a database store.” And these claims now also further recite that the plurality of different persistence formats includes “a first format in which an instance of the user-defined aggregate is automatically serialized in accordance with a native format of the database system; and a second format in which an instance of the user-defined aggregate is serialized in a manner defined by the class.” The applicants respectfully submit that the cited art does not teach or suggest these features.

With respect to the feature of requiring “that the class specify one of a plurality of different formats which describes *how* instances of the user-defined aggregate are to be persisted in a database store,” the Office Action asserts that the Barry reference teaches this feature with its “PersistenceCapable” interface, however it does not. While the PersistenceCapable interface of Barry does indicate to a preprocessor that a given class is capable of being persisted, it does not indicate *how* that instance is to be persisted. Moreover, there is nothing in Barry to suggest that one would use the PersistenceCapable interface in the context of a user-defined aggregate within a database. Reconsideration of the Section 103(a) rejection of the subject matter of claims 2 and 15 (now incorporated into claims 1 and 14) is respectfully requested for this reason.

As for the further recitation in amended claims 1 and 14 that the plurality of different persistence formats includes “a first format in which an instance of the user-defined aggregate is automatically serialized in accordance with a native format of the database system; and a second format in which an instance of the user-defined aggregate is serialized in a manner defined by the class,” the Office Action points to the Berg reference at “page 98, second column, second paragraph through the third column, first paragraph” (Office Action, pp. 12-13). However, the applicants do not understand how any combination of Schallehn, Barry and Berg teaches specifying *within the class defining a user-defined aggregate* one of the two different formats expressly recited in the claim. The applicants cannot find in the cited portion of Berg any reference to a specification within a class defining a user-defined aggregate of a “format in which an instance of [a] user-defined aggregate is automatically serialized in accordance with a native format of [a] database system.” There does not even appear to be any discussion of database systems in Berg at all. Nor does Berg appear to describe specifying with a class that defines a user-defined aggregate a “format in which an instance of the user-defined aggregate is serialized in a manner defined by the [user-defined aggregate] class” itself. Because Berg does not teach or suggest these features, the applicants respectfully request that the Section 103(a) rejection of the subject matter of claims 6 and 19 (now incorporated into claims 1 and 14) be withdrawn.

For all the foregoing reasons, the applicants respectfully submit that independent claims 1 and 14, as amended, patentably define over the prior art of record. Inasmuch as the remaining claims all depend, either directly or indirectly, from one of those independent

claims, the applicants submit that they too patentably define over the cited art for the same reasons.

The Cited Art Does Not Teach or Suggest The Features of Dependent Claims 12, 13 and 25, 26

Although claims 12, 13 and 25, 26 depend from claims 1 and 14, and thus are allowable for the same reasons as explained above, the applicants wish to further point out that the subject matter of those claims is also neither taught nor suggested by the cited art.

Claims 12 and 13 stand rejected under Section 103(a) as being unpatentable over Schallehn in view of Soloviev. Specifically, the Office Action asserts that Soloviev discloses the subject matter of each claim at “page 100, first column, 4th paragraph” (Office Action, pp. 8-10). The applicants respectfully submit that Soloviev does not teach or suggest the features recited in claims 12 and 13.

Claims 12 and 25 recite that the class defining a user-defined aggregate “is annotated to specify one of” four different attributes, including (1) “an attribute that indicates *whether the user-defined aggregate* is invariant to duplicates;” (2) “an attribute that indicates *whether the user-defined aggregate* is invariant to NULL values;” (3) “an attribute that indicates *whether the user-defined aggregate* is invariant to order;” and (4) “an attribute that indicates *whether the user-defined aggregate* returns NULL if the group on which the user-defined aggregate is to be computed is empty” (emphasis added). As explained in paragraphs 0044 – 0048 of the instant specification, these attributes are used by a query processor to search for more efficient query execution plans depending on what these attributes indicate about the user-defined aggregate. Paragraphs 0044 – 0048 of the specification provide examples of how these attributes can be used to determine or modify how the user-defined aggregate is computed. Soloviev does not teach or suggest this feature of the invention.

The applicants have read the entire first column of page 100 of Soloviev and do not see any description of *annotating* a class defining a user-defined aggregate with any of the four attributes recited in claims 12 and 25. The only thing described in the first column of page 100 of Soloviev that appears to be some sort of attribute is the “*indexable* declaration” that may be applied to the individual data members of a class. However, that “declaration”

doesn't provide any of the indications recited in claims 12 and 25. In fact, to the extent that it indicates anything, it indicates whether a "data member" of a class is "indexable," not anything about the attributes of a user-defined aggregate itself. For these reasons, the applicants respectfully submit that Soloviev, whether alone or in combination with Schallehn, does not teach or suggest the subject matter of claims 12 and 25.

Claims 13 and 26 further recite "determining a method of computation of an instance of the user-defined aggregate based at least in part upon a value of said one of said attributes" in claims 12 and 25. The Office Action again cites to "page 100, first column, 4th paragraph" of Soloviev as disclosing this feature, but the applicants are unable to find any description anywhere in that first column that describes or even remotely suggests this claimed feature.

Thus, the applicants respectfully submit that the subject matter of claims 12, 13, 25 and 26 is separately allowable for these additional reasons. Reconsideration of the section 103(a) rejection of those claims is respectfully requested.

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PATENT

CONCLUSION

In view of the amendments and remarks presented above, the applicants respectfully submit that the present application is now in condition for allowance.

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